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REMARKS/ARGUMENTS

Claim 1-46 are pending in this application. All of these claims stand rejected. Claims 1-5, 8-12, 14, 15, 18, 20-25, 29, 34-36, 41 and 45 have been amended to provide minor clarification and not to overcome prior art cited by the Examiner. No new matter has been added. Applicant respectfully requests reconsideration of this application.

Claim Rejections Under 35 U.S.C. §112

Claims 2, 3, 5, 6, 11, 15, 22 and 23 stand rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. With regard to the rejections of claims 2 and 3, the Applicant has made minor clarifying amendments to claims 2 and 3 to traverse these rejections. Accordingly, Applicant has also made minor clarifying amendments to claims 1, 4, 5, 8-12, 14, 15, 18, 20-25, 29, 34-36, 41 and 45 to maintain consistent claim language throughout the claim set. No new matter has been added by these amendments.

With regard to claim 2, the Examiner states that there is insufficient antecedent basis for the second limitation, "the set of code modules." Applicant has amended claim 2, as well as claim 1, to clarify that "the set of code modules" in the second limitation of claim 2 refers to "the second set of code modules," referenced in the final limitation of claim 1. Accordingly, Applicant has amended claim 1 to clarify "a first set of code modules," and "a second set of code modules." Because claim 2 properly depends from claim 1 and because Applicant has amended claims 1 and 2 to clarify the antecedent basis issue, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to and of claim 2.

With regard to claim 3, the Examiner states that it is unclear "how the first SAN device is discovered even though the data processing system already contains a first device identifier." Applicant has amended claims 1-3 to clarify this

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issue. Specifically, Applicant has amended claims 1-3 to clarify "a first set of code modules," and "a second set of code modules." Applicant submits that the amendments to claims 1-3 coupled with the description in Applicant's specification at page 14, line 19 through page 15, line 27, and FIG. 4, provide clear and definite support for the limitations of claim 3. Because claim 3 properly depends from claims 1 and 2 and because Applicant has amended claims 1-3 to clarify these issues, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to and of claim 3.

The Examiner has also rejected claims 5, 6, 11, 15, 22 and 23 under the same rationale as used to reject claim 3, stating that they contain limitations similar to claim 3. Applicant traverses these rejections of claims 5, 6, 11, 15, 22 and 23 for reasons similar to those given above with regard to claim 3.

Claim Rejections Under 35 U.S.C. §102(e)

Claims 1-11, 14, 19, 20, 24, 29, 33, 34, 35, 37, 41 and 46 stand rejected under 35 U.S.C. §102(e) as being anticipated by Kumar et al. (U.S. Pat. No. 6,769,008; hereinafter "Kumar"). The Applicant respectfully traverses the rejections for at least the following reasons.

Generally, Kumar discloses a method and apparatus for dynamically altering configurations of clustered computing systems without having to completely shut down the system, thus providing uninterrupted services while the configuration is being dynamically altered. See Abstract. Accordingly, components, such as nodes or other devices (e.g., peripheral devices), can be added to or removed from the clustered computing system while one or more existing nodes remain active. See col. 5, lines 4-8.

Applicant's claims 1, 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 and 46 all recite similar limitations with regard to receiving or providing a signal indicating that modification has occurred. Applicants have provided (below) the actual limitations of each claim, following by argument which pertains to all of these limitations, for the sake of brevity. Applicant's claims 1 and 8 recite,

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"providing a signal to the executing program indicating that the device information has been modified to produce modified device information." Applicant's claims 10 and 14 recite, "while executing the program: receiving a signal indicating that the information relating to the first SAN device identifier has been modified." Applicant's claim 19 recites, "while executing the program: receiving a signal indicating that the code module has been modified." Applicant's claim 20 recites, "code for receiving a signal while the application program is executing, the signal indicating that the device information has been modified to produce modified device information." Applicant's claim 24 and 29 recites, "code for receiving a signal from the executing program, the signal indicating the device information has been modified." Applicant's claim 26 recites, "code for receiving a signal indicating that the information related to the first SAN device identifier has been modified." Applicant's claim 33 recites, "code for receiving a signal indicating that the code module has been modified." Applicant's claims 34, 35, 37, 41, 46 recite, "receive, while the program is executed by the processor, a signal indicating that the device information has been modified."

Thus, Applicant's claims 1, 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 recite providing or receiving a signal indicating that device information has already been modified. Conversely, Kumar discloses "a configuration alteration request for the addition or removal of one or more components to or from the existing configuration." See, e.g., col. 3, 11. 31-37. The request of Kumar thus teaches receiving a signal requesting the configuration to be changed by adding or removing a component. Said another way, Kumar teaches receiving a request for the removal or addition of a component before the configuration has been changed. See col. 3, lines 38-40 and FIG. 3A. Applicant's claims 1, 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 recite providing or receiving a signal after modification, whereas Kumar only discloses receiving a request for the addition or removal of a component before the configuration is changed. Thus, Applicant's claims 1, 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 are clearly distinguishable over the teachings of Kumar for at least this reason.

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Applicant's claims 1 and 34 further recite that operations of (1) "deleting the first set of code modules," (2) "accessing the modified device information," and (3) "loading a second set of code modules" are performed "in response to the signal," (i.e. the signal indicating that the device information has already been modified). Kumar certainly does not disclose, teach, or suggest performing these operations "in response to the signal indicating that the device information has been modified," because Kumar does not disclose a signal that indicates that device information has already been modified. Rather, Kumar merely receives a request for the addition or removal of one or more components and in response to that request, must first determine (306) whether there are other components associated with the configuration alteration request, by determining a component vote for a selected component. See col. 3, lines 44-47 and FIG. 3A. After receiving the request, the system of Kumar first determines whether or not to modify device information, whereas Applicant's claims 1 and 34 recite providing a signal indicating that the device information has been modified to produce modified device information and in response to that signal performing the recited operations (i.e., deleting, accessing, loading). Thus, Applicant's claims 1 and 34 are clearly distinguishable over the teachings of Kumar for at least the above reasons.

Applicant's claims 1, 8, 10, 18, 20, 24, 26, 33, 34, 37 and 46 all recite similar limitations with regard to deleting one or more code modules from the address space of the executing program. Applicants have provided (below) the actual limitations of each claim, following by argument which pertains to all of these limitations, for the sake of brevity. Applicant's claims 1 and 8 further recite, "deleting the first set of code modules referenced by the device information before modification from the address space of the executing program." Applicant's claim 10 recites, "deleting the first code module associated with the first SAN device identifier from the address space of the executing program." Applicant's claim 19 recites, "deleting the previously loaded code module from the address space of the executing program." Applicant's claim 20 recites, "code for deleting the first set of code modules referenced by the device information

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before modification from the address space of the executing application program in response to the signal." Applicant's claims 24 and 26 recite, "code for deleting the first code module associated with the first SAN device Identifier from the address space of the executing program in response to the signal." Applicant's claim 33 recites, "code for deleting the previously loaded code module from the address space of the executing application program in response to the signal." Applicant's claim 34 recites, "delete the first set of code modules reference by the device information before modification from the address space of the program executed by the processor." Applicant's claim 37 recites, "delete the first code module associated with the first SAN device Identifier from the address space of the executing program." Applicant's claim 46 recites, "delete the previously loaded code module from the address space of the executing program." As described above, the "deleting" operation is performed in response to the signal indicating that device information has been modified. The code modules of Applicant's claims 1, 8, 10, 19, 20, 24, 26, 33, 34, 37 and 46 are clearly described in Applicant's specification at page 10, lines 13 -15, as "software code modules" or "programming data." See Applicant's Specification at page 11, lines 23-30; and page 12, line 28 through page 13, line 12.

Kumar does not disclose deleting code modules in response to the signal indicating that device information has been modified, nor does Kumar disclose deleting code modules from an address space of the executing program in response to the signal. Although the Examiner relies upon col. 3, lines 35-45 for the argument that Kumar discloses "deleting the set of code modules," Col. 3, line 35-45 refers to updating component role information (CVI) of the active component while the component remains active. As the Examiner admits, each node in the cluster system of Kumar stores Cluster Configuration Information (CCI), which describes nodes, devices, interconnections of the clustered system, and the CVI which is being updated. See also Fig. 2A. This simply fails to disclose, teach, or suggest "deleting the first of code modules referenced by the device information before modification from the address space of the executing program." First, updating the CVI does not disclose, teach, or suggest (directly

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or inherently) deleting the first set of code modules (or loading a second set of code modules – see below). Rather updating suggests modifying the CVI to reflect new vote information.

Nor does Applicant acquiesce to the Examiner's argument that an initialization of the cluster system must load the CCI or CVI stored remotely on each node into an address space of the executing program. The individual CCI or CVI of each node, for example, could simply be opened and read instead of being loaded into an address space of the executing program. Indeed, it appears that the CCI and CVI is made by the individual nodes for determining the cluster configuration around them, not for initializing the overall cluster configuration.

Applicant's claims 1, 20, 24, 26, 29, 33, 34 and 41 all recite similar limitations with regard to accessing modified device information. Applicants have provided (below) the actual limitations of each claim, following by argument which pertains to all of these limitations, for the sake of brevity. Applicant's claim 1 further recites "accessing the modified device information" in response to the signal indicating that the device information has been modified. Applicant's claim 20 recites, "code for accessing the modified device information." Applicant's claims 24 and 26 recite, "code for accessing device information." Applicant's claims 29 and 33 recite, "code for accessing device information comprising a set of SAN device identifiers." Applicant's claim 34 recites, "access the modified device information." Applicant's claim 41 recites, "access device information." Kumar, rather, modifies the CVI in response to a request for the addition or removal of one or more components, and does not disclose, teach, or suggest accessing the modified device information in response to a signal indicating device information has been modified. Thus, Applicant's claims 1, 20, 24, 26, 29, 33, 34 and 41 are believed to be allowable, at least, for the above reasons.

Applicant's claims 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 and 46 all recite similar limitations with regard to loading into an address space of the executing program. Applicants have provided (below) the actual limitations of each claim, following by argument which pertains to all of these limitations, for the sake of brevity. Kumar does not disclose "loading a second set of code

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modules into an address space of the executing program" in response to the signal indicating that the device information has been modified.

Applicant's claims 10 and 14 recite, "loading the second code module into the address space of the executing program." Applicant's claim 19 recites, "loading the modified code module into the address space of the executing program." Applicant's claim 20 recites, "code for loading a second set of code modules referenced by the modified device information into the address space of the executing application program." Applicant's claim 24 recites, "code for loading the first set of code modules identified in the device information into an address space of an executing application program." Applicant's claims 26 and 33 recite, "code for loading the first code module into an address space of an executing program." Applicant's claim 29 recites, "code for loading the code modules associated with the set of SAN device identifiers into an address space of an executing application program." Applicant's claim 29 further recites, "code for loading the second code module into the address space of the executing application program in response to the signal." Applicant's claim 34 recites, "load a second set of code modules referenced by the modified device information into the address space of the program executed by the processor." Applicant's claim 35 recites, "load the first set of code modules identified in the device information in an address space of the program executed by the processor." Applicant's claim 37 recites, "load the second code module into the address space of the program executed by the processor." Applicant's claim 41 recites, "load the first set of code modules associated with the set of SAN device identifiers including the first code module into an address space of the program." Applicant's claim 41 further recites, "in response to the signal, load the second code module into the address space of the program." Applicant's claim 46 recites, "load the modified code module into the address space of the executing program." As described above, Kumar merely discloses updating CVI at each node corresponding to the changes being made to the cluster configuration. Kumar does not disclose, teach, or suggest loading a second set of code modules into an address space of the executing program, nor does Kumar disclose, teach, or

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suggest doing so *in response to* the signal indicating that the device information has been modified. Thus, Applicant's claims 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 and 46 are believed to be allowable for at least the above reasons.

The Examiner has also rejected claims 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 and 46 for reasons similar to those given with regard to claim 1. Applicant respectfully traverses the rejections of claims 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 and 46, at least, for the reasons given above with regard to claim 1. Dependent claims 2-9, 11-13, 21-23, 25-28 36 and 38-40 are believed to be allowable, at least, because they depend from allowable independent claims 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 or 46.

Thus, Applicant's claims 1, 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 and 46 are believed to be allowable over Kumar, for at least the above reasons. Dependent claims 15-18, 30-32 and 42-45 are believed to be allowable, at least, because they depend from allowable independent claims 1, 8, 10, 14, 19, 20, 24, 26, 29, 33, 34, 35, 37, 41 or 46.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 12 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kumar et al. (U.S. Pat. No. 6,769,008; hereinafter "Kumar"). The Applicant respectfully traverses the rejections for at least the following reasons. Applicant's claims 12 and 13 are dependent upon claim 11, which is dependent upon claim 10. Applicant's claims 12 and 13 are believed to be allowable, at least, because they depend from allowable claims 10 and 11, and for the reasons given above.

The Examiner seems to be further rejecting claim 12 under 35 U.S.C. §103(a) as being unpatentable over Kumar, in light of Holloway et al. (U.S. Pat. No. 6,167,883; hereinafter "Holloway"). Applicant finds no motivation to combine Kumar and Holloway and respectfully submits that neither Kumar, nor Holloway, disclose the teachings of Applicant's claim 12. Applicant's claim 12 is believed to be allowable, at least, for the reasons given above.

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The Examiner seems to be further rejecting claim 13 under 35 U.S.C. §103(a) as being unpatentable over Kumar, in light of Roy et al. (U.S. Pub. No. 2002/0062366; hereinafter "Roy"). Applicant finds no motivation to combine Kumar and Roy and respectfully submits that neither Kumar, nor Roy, disclose the teachings of Applicant's claim 13. Applicant's claim 13 is believed to be allowable, at least, for the reasons given above.

Conclusion

The Applicant respectfully requests prompt issuance of a notice of allowance for claims 1-46 in the above-referenced application. If the Examiner believes that any matter may be more expediently resolved via a telephone conference, the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Dated: August 15, 2006.

Respectfully submitted,



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